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EXAMINER

GAY, JENNIFER HAWKINS

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/871,240

**Applicant(s)**

DUHON ET AL.

**Examiner**

Jennifer H Gay

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2,3,5-11 and 27-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,3,5-11,27-33 and 35-43 is/are rejected.
- 7) ☒ Claim(s) 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/16/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Metcalfe et al. (US 2002/0166668) in view of Miyake et al. (US 6,056,835).

*Regarding claim 2:* Metcalfe et al. discloses an apparatus for use in a wellbore. The apparatus includes an element that is formed from a ductile material that is plastically deformed (paragraph 0030) and a seal engageable with the element.

Metcalfe et al. discloses all of the limitations of the above claims except for the element being specifically made from a superplastic material.

Miyake et al. teaches that aluminum is a well known superplastic (2:9-13, 5:48-65). It is further well known that aluminum is a ductile material.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Metcalfe et al. such that the element was made from a superplastic material such as that taught by Miyake et al. in order to have formed the element from a material that was capable of being subjected to expanding without failure (1:5-10). One would have been motivated to make such a combination because an element that was more versatile and less prone to failure would have been obtained, as taught by Miyake et al. (36:1-20).

*Regarding claim 27:* The expansion of the element forces the seals into engagement with downhole casing.

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*Regarding claim 28:* The examiner notes that while Metcalfe et al. does not specifically disclose that the seal is a packer, a wellbore packer is merely a wellbore seal. Therefore, Metcalfe et al. discloses a packer.

*Regarding claim 29:* Though not specifically disclosed, the expansion of the element could function as a patch for the wellbore casing.

3. Claims 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Metcalfe et al. (US 2002/0166668) in view of Miyake et al. (US 6,056,835) as applied to claims 2 and 27 above, and further in view of Mohaupt (US 4,081,031).

*Regarding claim 30:* Metcalfe et al. and Miyake et al. disclose all of the limitations of the above claims except for a heating device to heat the superplastic material to a temperature at which the element exhibits superplastic behavior.

Mohaupt discloses a downhole heating element. Mohaupt further teaches using the heating element to deform the walls of the aluminum housing of the tool (4:4-7).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Metcalfe et al. in view of Miyake et al. to include a heating element as taught by Mohaupt in order to have used a well known method for cause a superplastic material to exhibit superplastic behavior (1:19-30 of Miyake et al.). One would have been motivated to make such a combination because a means for increasing the ability of the element to expand would have been obtained, as inferred by Mohaupt.

*Regarding claim 31:* Metcalfe et al. includes a piston to cause the translation of the element (paragraph 0045).

*Regarding claim 32:* The heating device is a chemical propellant.

4. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Metcalfe et al. (US 2002/0166668) in view of Miyake et al. (US 6,056,835) as applied to claims 2 and 27 above, and further in view of Gonzalez et al. (US 6,474,414).

Metcalf et al. and Miyake et al. disclose all of the limitations of the above claims except for the element further including a plug to block the flow of fluid through the bore of a conduit.

Gonzalez et al. teaches a downhole plug for blocking flow through a conduit. The plug is characterized as being made from a highly ductile and flowable solder such as aluminum (3:35-37, 6:17-18).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the element of Metcalf et al. in view of Miyake et al. to include a plug such as that taught by Gonzalez et al. in order to have been able to isolate sections of the wellbore from other sections of the wellbore (1:5-16). One would have been motivated to make such a combination because a means for easily installing and removing wellbore plugs would have been obtained, as taught by Gonzalez et al. (2:1-23).

5. Claims 3, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arizmendi (US 5,941,313) in view of Miyake et al. (US 6,056,835).

*Regarding claim 3:* Arizmendi discloses an apparatus for use in a wellbore. The apparatus includes an element formed of titanium (4:30-33, 54-57) that acts as an anchor.

Arizmendi discloses all of the limitations of the above claims except for the element being specifically formed from a superplastic material.

Miyake et al. teaches that aluminum is a well known superplastic (2:9-13, 5:48-65). It is further well known that aluminum is a ductile material.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Arizmendi such that the element was made from a superplastic material such as that taught by Miyake et al. in order to have formed the element from a material that was capable of being subjected to expanding without failure (1:5-10). One would have been motivated to make such a combination because an element that was more versatile and less prone to failure would have been obtained, as taught by Miyake et al. (36:1-20).

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Further, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used the aluminum of Miyake et al. instead of titanium of Arizmendi, since the examiner takes Official Notice of the equivalence of aluminum and titanium for their use as superplastics and the selection of any of these known equivalents as the element of Arizmendi would be within the level of ordinary skill in the art.

*Regarding claim 35:* The anchor also functions as a packer.

*Regarding claim 36:* The packer includes a seal **26** that is actuated by the movement of a first sleeve **30** relative to a second sleeve **28**.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Owen et al. (US 3,712,376) in view of Miyake et al. (US 6,056,835).

Owen et al. discloses an apparatus usable in a wellbore. The apparatus includes an element that is formed from aluminum (6:37-43). The element may function as a sand screen (8:18-21).

Owen et al. discloses all of the limitations of the above claims except for the element being specifically formed from a superplastic material.

Miyake et al. teaches that aluminum is a well known superplastic (2:9-13, 5:48-65). It is further well known that aluminum is a ductile material.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Owen et al. such that the element was made from a superplastic material such as that taught by Miyake et al. in order to have formed the element from a material that was capable of being subjected to expanding without failure (1:5-10). One would have been motivated to make such a combination because an element that was more versatile and less prone to failure would have been obtained, as taught by Miyake et al. (36:1-20).

7. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Owen et al. (US 3,712,376) in view of Miyake et al. (US 6,056,835) as applied to claim 5 above, and further in view of Mohaupt (US 4,081,031).

Owen et al. and Miyake et al. disclose all of the limitations of the above claims except for a heating device to heat the superplastic material to a temperature at which the element exhibits superplastic behavior.

Mohaupt discloses a downhole heating element. Mohaupt further teaches using the heating element to deform the walls of the aluminum housing of the tool (4:4-7).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Owen et al. in view of Miyake et al. to include a heating element as taught by Mohaupt in order to have used a well known method for cause a superplastic material to exhibit superplastic behavior (1:19-30 of Miyake et al.). One would have been motivated to make such a combination because a means for increasing the ability of the element to expand would have been obtained, as inferred by Mohaupt.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reid (US 6,109,355) in view of Miyake et al. (US 6,056,835).

Reid discloses an apparatus usable in a wellbore. The apparatus includes an element formed from a material that is readily deformable (4:53-57). The element functions as a shock absorber.

Reid discloses all of the limitations of the above claims except for the element being specifically formed from a superplastic material.

Miyake et al. teaches that aluminum is a well known superplastic (2:9-13, 5:48-65). It is further well known that aluminum is a ductile material.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Reid such that the element was made from a superplastic material such as that taught by Miyake et al. in order to have formed the element from a material that was capable of being subjected to expanding without failure (1:5-10). One would have been motivated to make such a combination because an element that was more versatile and less prone to failure would have been obtained, as taught by Miyake et al. (36:1-20).

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9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brieger et al. (US 4,122,899) in view of Miyake et al. (US 6,056,835).

Brieger discloses an apparatus usable in a wellbore. The apparatus includes an element that is formed from aluminum and includes a releasable connector (3:60-63).

Brieger discloses all of the limitations of the above claims except for the element being specifically formed from a superplastic material.

Miyake et al. teaches that aluminum is a well known superplastic (2:9-13, 5:48-65). It is further well known that aluminum is a ductile material.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Brieger such that the element was made from a superplastic material such as that taught by Miyake et al. in order to have formed the element from a material that was capable of being subjected to expanding without failure (1:5-10). One would have been motivated to make such a combination because an element that was more versatile and less prone to failure would have been obtained, as taught by Miyake et al. (36:1-20).

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson et al. (US 6,454,001) in view of Miyake et al. (US 6,056,835).

Thompson et al. discloses an apparatus usable in a wellbore. The apparatus includes an element that is formed from aluminum and includes a releasable connector (5:65-6:7).

Thompson et al. discloses all of the limitations of the above claims except for the element being specifically formed from a superplastic material.

Miyake et al. teaches that aluminum is a well known superplastic (2:9-13, 5:48-65). It is further well known that aluminum is a ductile material.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Thompson et al. such that the element was made from a superplastic material such as that taught by Miyake et al. in order to have formed the element from a material that was capable of being subjected to expanding without failure (1:5-10). One would have been motivated to make such a



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combination because an element that was more versatile and less prone to failure would have been obtained, as taught by Miyake et al. (36:1-20).

11. Claims 8, 10, 11, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mohaupt (US 4,081,031) in view of Miyake et al. (US 6,056,835).

*Regarding claim 8:* Mohaupt discloses an apparatus usable in a wellbore. The apparatus includes an element that is formed from aluminum (4:5-7) and includes an explosive component.

Mohaupt discloses all of the limitations of the above claims except for the element being specifically formed from a superplastic material.

Miyake et al. teaches that aluminum is a well known superplastic (2:9-13, 5:48-65). It is further well known that aluminum is a ductile material.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Mohaupt such that the element was made from a superplastic material such as that taught by Miyake et al. in order to have formed the element from a material that was capable of being subjected to expanding without failure (1:5-10). One would have been motivated to make such a combination because an element that was more versatile and less prone to failure would have been obtained, as taught by Miyake et al. (36:1-20).

*Regarding claim 10:* Mohaupt discloses an apparatus usable in a wellbore. The apparatus includes an element that is formed from aluminum (4:5-7) and includes a weak point connector (8:58-60).

Mohaupt discloses all of the limitations of the above claims except for the element being specifically formed from a superplastic material.

Miyake et al. teaches that aluminum is a well known superplastic (2:9-13, 5:48-65). It is further well known that aluminum is a ductile material.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Mohaupt such that the element was made from a superplastic material such as that taught by Miyake et al. in order to have formed the element from a material that was capable of being subjected to expanding without

failure (1:5-10). One would have been motivated to make such a combination because an element that was more versatile and less prone to failure would have been obtained, as taught by Miyake et al. (36:1-20).

*Regarding claim 11:* Mohaupt discloses an apparatus usable in a wellbore. The apparatus includes an element that is formed from aluminum (4:5-7) and a heating device to heat the element to a temperature at which the material will plastically deform.

Mohaupt discloses all of the limitations of the above claims except for the element being specifically formed from a superplastic material.

Miyake et al. teaches that aluminum is a well known superplastic (2:9-13, 5:48-65). It is further well known that aluminum is a ductile material.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Mohaupt such that the element was made from a superplastic material such as that taught by Miyake et al. in order to have formed the element from a material that was capable of being subjected to expanding without failure (1:5-10). One would have been motivated to make such a combination because an element that was more versatile and less prone to failure would have been obtained, as taught by Miyake et al. (36:1-20).

*Regarding claim 39:* The heating device is a chemical propellant.

12. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mohaupt (US 4,081,031) in view of Miyake et al. (US 6,056,835) as applied to claim 8 above, and further in view of Henning et al. (US 4,042,019).

Mohaupt and Miyake et al. disclose all of the limitations of the above claims except for the explosive component being a shaped charge.

Henning teaches a wellbore tubing cutter that includes shaped charges formed from aluminum.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Mohaupt in view of Miyake et al. such that the explosive component was a shaped charge as taught by Henning et al. in order to have provided a completely contained explosive component. One would have been

motivated to make such a combination because a means for reducing the likelihood of inadvertently detonating the explosive device would have been obtained.

13. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Metcalfe et al. (US 2002/0166668) in view of Miyake et al. (US 6,056,835) and Mohaupt (US 4,081,031).

Metcalfe et al. discloses an apparatus for use in a wellbore. The apparatus includes an element that is formed from a ductile material that is plastically deformed (paragraph 0030) and includes a liner.

Metcalfe et al. discloses all of the limitations of the above claims except for the element being specifically made from a superplastic material and except for a heating device to heat the superplastic material to a temperature at which the element exhibits superplastic behavior.

Miyake et al. teaches that aluminum is a well known superplastic (2:9-13, 5:48-65). It is further well known that aluminum is a ductile material.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Metcalfe et al. such that the element was made from a superplastic material such as that taught by Miyake et al. in order to have formed the element from a material that was capable of being subjected to expanding without failure (1:5-10). One would have been motivated to make such a combination because an element that was more versatile and less prone to failure would have been obtained, as taught by Miyake et al. (36:1-20).

Mohaupt discloses a downhole heating element. Mohaupt further teaches using the heating element to deform the walls of the aluminum housing of the tool (4:4-7).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Metcalfe et al. in view of Miyake et al. to include a heating element as taught by Mohaupt in order to have used a well known method for cause a superplastic material to exhibit superplastic behavior (1:19-30 of Miyake et al.). One would have been motivated to make such a combination because a means for increasing the ability of the element to expand would have been obtained, as inferred by Mohaupt.

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14. Claims 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timmons (US 3,380,528) in view of Miyake et al. (US 6,056,835).

Timmons discloses an apparatus usable in a wellbore. The apparatus includes a fishing tool that includes expandable element (figures 2 and 3) for engaging the inner wall of a conduit to be removed from the wellbore.

Timmons discloses all of the limitations of the above claims except for the element being formed from a superplastic material.

Miyake et al. teaches that aluminum is a well known superplastic (2:9-13, 5:48-65). It is further well known that aluminum is a ductile material.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Timmons such that the element was made from a superplastic material such as that taught by Miyake et al. in order to have formed the element from a material that was capable of being subjected to expanding without failure (1:5-10). One would have been motivated to make such a combination because an element that was more versatile and less prone to failure would have been obtained, as taught by Miyake et al. (36:1-20).

15. Claims 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nobileau (US 5,979,560) in view of Miyake et al. (US 6,056,835).

Nobileau discloses an apparatus usable in a wellbore. The apparatus includes a junction seal assembly that is formed from a ductile material that is plastically deformed (2:1-15). The junction includes a tubing and a pipe that is inserted into a lateral wellbore.

Nobileau discloses all of the limitations of the above claims except for the element being specifically formed from a superplastic material.

Miyake et al. teaches that aluminum is a well known superplastic (2:9-13, 5:48-65). It is further well known that aluminum is a ductile material.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Nobileau such that the element was made from a superplastic material such as that taught by Miyake et al. in order to have formed

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the element from a material that was capable of being subjected to expanding without failure (1:5-10). One would have been motivated to make such a combination because an element that was more versatile and less prone to failure would have been obtained, as taught by Miyake et al. (36:1-20).

### ***Allowable Subject Matter***

16. Claim 34 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The indicated allowability of claims 28-33, 36-38, 40-43 is withdrawn in view of the newly discovered reference(s) applied in the rejections provided above.

### ***Response to Arguments***

18. Applicant's arguments, see page 6, line 10 of the last paragraph, filed 2 January 2004, with respect to the rejection(s) of claim(s) 2, 3, 5-11, 27, 35, and 39 under 35 USC 102(b), 102(e), and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a different interpretation of previously applied references and newly found references as applied in the rejections provided above.

### ***Conclusion***

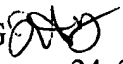
19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
David Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

JHG   
February 24, 2004